Cultural preferences and firm financing choices

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We document significant differences in the financing structure of small firms with managers of diverse cultural backgrounds. To isolate the effect of culture, we exploit cultural heterogeneity within a geographical area with shared regulations, institutions, and macroeconomic cycles. Our findings suggest that there exist significant cultural differences in the preference towards debt funding and in the use of formal and informal sources of financing (bank loans and trade credit). Our results are robust to alternative explanations based on potential differences in credit constraints and in the distribution of cultural origins across industries, trading partners, and headquarters location.

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1. Introduction

In this paper we examine whether the cultural origin of firm managers affects the financing decisions of the firms they run. The notion that the cultural background of individuals can affect their own financial decisions is well established in the economics literature (see, for example, Guiso et al., 2004). At the same time, an influential body of literature dating back at least to Bertrand and Schoar (2003) has documented that individual characteristics of managers represent significant determinants of firm policies. Following the predictions of the managerial-style literature, we ask to what extent the financial preferences of managers—as shaped by their cultural origin—carry through into firm financial policies.

The empirical identification of the effect of management's cultural traits on firm financing decisions is challenging, because firms led by CEOs who belong to different cultural groups are usually headquartered in different countries. Being able to distinguish the role played by the cultural background of the manager from the role played by other country-specific factors is crucial, as differences in economic conditions (i.e., interest rates, inflation, or expectations about the business cycle), incentives provided by institutions and regulation (i.e., tax incentives), and geographic considerations (such as proximity to financial institutions) have been shown to affect financing choices. We overcome this empirical challenge by exploiting cultural differences in a sample of firms within a geographical area that shares a common regulatory, institutional, and macroeconomic setting: The autonomous province of South Tyrol in Northern Italy.

The South Tyrol province represents an excellent natural laboratory to assess whether differences in the cultural origin of firm managers affect firm financing choices. One of the richest areas in the European Union, South Tyrol is home to individuals who belong to two main cultural groups:

Italian and Germanic.[1] Both Italian and German are official languages and the two cultural groups share a common Catholic religious background and live next to each other within municipalities. However, they lead relatively segregated social lives: Children attend separate schools and individuals of Germanic (Italian) origin interact and socialize mostly with Germanic (Italian) peers. Importantly for our study, the province includes a large number of firms from a wide range of industry sectors, all subject to the same institutional, regulatory, and legal framework. Thus, taxation and subsidization of the different financial instruments are equal for all firms in the province. Due to its uniqueness, the South Tyrol setting has been used in previous studies to investigate the influence of culture on several economic outcomes (see Angerer et al., 2016 and Sutter et al., 2018). While this empirical laboratory is highly specific, our results are of general interest, as one quarter of all jurisdictions in the world operate in more than one language (Leung, 2016). Notable examples include Belgium, Canada, Switzerland, and the European Union as a whole.

Exploring cultural differences across firm managers in South Tyrol is particularly well suited to address our research question because the two cultural groups differ significantly along several dimensions that can affect financing choices. To start with, we note that, in contrast to its Italian translation, the German word for debt, *Schuld*, is morally charged (meaning fault or guilt). In addition, German and Italian languages differ in their degree of future-time reference, an aspect that has been linked to financial behavior (Chen, 2013). Individuals from the two cultural groups also differ in their levels of social capital and trust, which have been associated with financial development and the recourse to informal sources of debt (Guiso et al., 2004; Levine et al., 2018).

[1] With "Germanic culture" we refer to people who speak German or a regional version of standard German.

Following Guiso et al. (2006), we define culture as "*those customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation*". Throughout our analysis we proxy the cultural origin of firm managers with their names, under the assumption that managers with a Germanic (Italian) name share a common language. Consistently with the above definition, our premise is that speaking the same language is a necessary condition for social interaction and for spreading cultural values. Through a common language, parents transmit their beliefs and preferences vertically to their children and, similarly, peers transmit their values horizontally to other peers. Accordingly, we classify all managers of firms headquartered in South Tyrol as of Germanic or Italian origin based on their given names and surnames. Our approach is similar to the one in Grinblatt and Keloharju (2001), who use a classification based on names to achieve intra-country cultural identification across two distinct language families.

In line with our predictions, we find significant differences with respect to financing decisions between firms managed by individuals of different cultural backgrounds. In particular, we find that firms run by managers from the Italian cultural group resort more to external debt financing than firms run by individuals from the Germanic group in the form of both bank debt and trade credit.

By construction, our setup allows us to minimize the possibility that the results are due to differences in institutional or macroeconomic conditions. In a series of robustness tests, we show that our results are not explained away by financial constraints and availability of bank and trade credit to firms of different cultural groups (both in normal times and during the financial and sovereign crisis), or by an endogenous sorting of managers of different cultural origin with certain firm characteristics. In fact, they continue to hold (i) within the sample of family firms

that are managed by a family member; (ii) within the subsample of micro firms; (iii) by excluding the industry sectors that have a high concentration of CEOs from a single cultural group; (iv) by excluding the firms that import the most and, hence, may differ in the terms of trade credit; (v) in culturally homogeneous cities; (vi) in the more culturally heterogeneous city of Bolzano. Our findings consistently show that firms managed by an individual of Italian origin are more likely to resort to external borrowings, and they rely more intensively on both formal and informal sources of financing. We conclude that managers from seemingly close cultures that live side-by-side can nevertheless display large and important differences in basic corporate finance decisions.

Our paper contributes primarily to the literature that analyzes the impact of culture on firm policies. Existing studies associate culture with corporate risk taking (Li et al., 2015), corporate governance (Griffin et al., 2017), firm performance (Frijns et al., 2016), and cash holdings (Chen et al., 2017). The papers most closely related to ours are those linking culture and firm financing (Chui et al., 2002; Li et al., 2011; El Ghoul and Zheng, 2016; Levine et al., 2018). Our contribution to the literature is threefold. First, these studies rely mainly on cross-country differences to investigate the relation between culture and firm financing and, as such, may be unable to fully control for differences in regulatory, institutional, and economic settings (Karolyi, 2016). In contrast, our method follows an alternative strand of the literature that relies on the epidemiological approach, which attempts to separate culture from the environment by studying outcome variables of individuals whose cultures differ, but who share a common economic and institutional setting (Fernández, 2011). In this respect, our empirical design specifically

addresses potential omitted variable biases linked to cross-country differences in institutional and regulatory structures, contract enforcement, and business practices.[2]

Second, while most related studies investigate publicly traded corporations, our sample firms are all privately held and mostly owner-managed. This feature brings three clear advantages: (i) Owner-managed firms are not prone to principal-agent problems; (ii) the cultural traits of managers are more likely to manifest themselves through firm financing policies; (iii) the risk of endogeneous sorting of managers from a given cultural group into firms with specific financing policies is minimized.

Third, our approach enables us to uncover new channels through which culture potentially affects the financing structure. As we will show, Schwartz's and Hofstede's cultural scores, which have been largely employed to establish the link between culture and firm financing (Chui et al., 2002; Li et al., 2011; El Ghoul and Zheng, 2016) are unlikely to be sufficiently different between the two cultural groups to explain our findings. Similarly, our results do not seem to be driven by linguistic differences in future-time reference, as in Chen (2013). Instead, we provide suggestive evidence that our findings are most likely to be explained by differences in the level of social capital and by broader cultural preferences for particular financing sources.

Our findings also make a more general contribution to the trade credit literature, by providing an additional explanation to the recourse to this type of financing in the presence of specialized financial intermediaries (Petersen and Rajan, 1997; Giannetti et al., 2011). The theoretical literature has mostly focused on transaction costs or information asymmetries to justify the co-existence of formal bank credit and informal trade credit. We suggest an additional explanation:

[2] Delis et al. (2017), Pan et al. (2017), and Nguyen et al. (2018) use this approach to assess the impact of culture on corporate performance and risk-taking.

The higher recourse to trade credit could simply reflect personal, culturally founded, preferences towards this informal source of financing.

The paper is organized as follows. Section 2 describes the institutional background, Section 3 outlines the research design, Section 4 presents the main empirical findings, Section 5 contains robustness checks, and Section 6 concludes the paper.

2. Institutional Background

In 1915, the Triple Entente—United Kingdom, France, and Russia—signed a treaty with Italy, which stipulated that Italy should abandon its alliance with Germany and Austria-Hungary (the Triple Alliance) and instead join the war on the side of the Entente. In return, Italy was promised a number of territorial gains following the ultimate defeat of the German and Austro-Hungarian Empires. Subsequently, in 1919, Austria ceded South Tyrol to Italy with the Treaty of Saint-Germain-en-Laye, thereby ending hundreds of years of Habsburg rule in the province.

At the time of its annexation, 89% of the population spoke German, 3% spoke Italian, and the remainder of the population spoke either Ladin or other languages of the Empire (Benvenuto, 2007). This was however to quickly change. In 1923, the fascist government initiated the "Italianization" of South Tyrol, which included a series of measures and economic incentives aimed at favoring the relocation of Italians from other parts of Italy to South Tyrol. During this period, the majority of German schools were closed and Italian was declared the only official language of the province.

Following the Second World War, the region of Trentino-Alto Adige (which includes the provinces of Trentino and South Tyrol) was granted a special autonomous status, German and

Italian were both recognized as official languages, incentives in favor of Italians were formally removed, and German-language education was re-introduced. However, since Italians were still the majority at the regional level, self-government of the Germanic minority was not possible until 1972, when the province of South Tyrol was explicitly granted an autonomous status. The 1972 agreement guarantees equal rights and opportunities to South Tyroleans of both language groups, and grants considerable legislative and executive independence from the national government in most matters of economic and social affairs. Importantly for our study, all firms headquartered in South Tyrol are subject to autonomous regulations that are set at the province level, and the chamber of commerce of the province is in charge of their enforcement. Thus, all firms in our study share the same legal and regulatory framework. In particular, any interest on debt financing is tax deductible for all firms in the province, and eventual subsidies are equal across firms within industrial sectors.

As of the last census in year 2011 (ASTAT, 2015), 70% out of roughly half a million inhabitants in South Tyrol reported German as their mother tongue, 26% reported Italian as their main language, and 4% identified themselves as Ladin speakers. The map in Figure 1 illustrates the distribution of Italian speakers in South Tyrol. The majority of the municipalities in South Tyrol are predominantly German speaking, although there is variation across towns: For example, 73% of the population in the capital city of Bolzano is Italian-speaking compared to 0% of the population of Martello, a town in the northwestern Vinschgau region that borders Austria and Switzerland. As a consequence of the "Italianization" process, the largest concentration of Italian speakers is located in the valleys close to the cities of Bolzano and Merano. Although municipalities differ considerably on the proportion of Italian-speaking population, there is no

geographic segregation between citizens within municipalities, and the vast majority of the population (96.1%) shares a common Roman Catholic religion.

3. Research Design

Our research design follows the epidemiological method (described extensively in Fernández, 2011), which aims to separate culture from the environment by studying the outcomes of individuals from different cultures who share a common economic and institutional setting. This approach presents obvious advantages in controlling for omitted variables and endogeneity compared to more standard methods such as the use of cross-country regressions. The epidemiological method is well suited for our purposes since South Tyroleans are all exposed to an identical economic and institutional environment and differ only in terms of belonging either to the Germanic or Italian culture. In order to assess the impact of managers' cultural origin on firm financing—and at the same time prevent cultural explanations from becoming simple ex-post rationalizations and reduce the risk of spurious correlations—we follow a three-step procedure described as follows.

3.1 Step one: Hypothesis development

Our first step is to argue that individuals in South Tyrol of Germanic culture on one hand, and of Italian culture on the other hand, differ in a number of characteristics that can affect their financing decisions. This link can be deduced from several studies, empirical observations, and anecdotal evidence.

From a purely linguistic perspective, we note that the German word for debt is *Schuld*, which can be translated into English as fault or guilt. This morally charged term contrasts with the more

neutral Italian word for debt, *debito*, stemming from the Latin word *debere*, which simply means to owe something. Consistently with an overall negative view of debt, there is anecdotal evidence that borrowing for consumption purposes is often frowned upon in German-speaking countries. Thus, it is natural to assume that Italian-speaking individuals would favor a financing structure that relies relatively more on debt than German-speaking individuals do.

Further, we can advance some hypothesis regarding the sources of external financing that Italian-speaking borrowers are more likely to tap. A number of studies have documented that Italians are more likely to rely on informal networks and institutions. Bandiera et al. (2010) find that Italian managers are more likely to be hired through informal channels such as personal or family contacts, rather than through formal channels like business contacts or headhunters. Puntscher et al. (2014) document that individuals of Italian origin living in South Tyrol are more likely to establish informal friendship ties and less likely to organize themselves and interact through formal associations compared to South Tyroleans of Germanic origin. Along these lines, we expect individuals of Italian origin to rely more often than individuals of Germanic origin on informal sources of financing.

Guiso et al. (2004) directly link the reliance on informal financing to the level of social capital. Since social capital is an important determinant of the level of trust, and trust is a necessary condition for the development of financial markets, social capital should affect the level of financial development. By exploiting social capital differences at the province level in Italy (measured as participation in referenda and blood donations), they show that households located in low social-capital areas make more use of informal credit. Data on households' recourse to bank and informal financing are not available at intra-province level, making it difficult to directly test whether South Tyroleans of Italian and Germanic origin differ in their financing

habits. However, a number of elements suggest that individuals of Italian cultural origin may be characterized by lower levels of social capital and trust. Becker et al. (2016) find that populations that were affiliated to the Habsburg Empire in the past, like the German-speaking inhabitants of South Tyrol, still preserve higher levels of trust in formal institutions today. Puntscher et al. (2014) conduct a survey in the South Tyrol province and report lower levels of generalized trust in Italian-speaking citizens.[3] Similar to Guiso et al. (2004), in an untabulated analysis we explore the participation in referenda and find a positive correlation of 45.5% between the proportion of German-speaking population in the municipalities in South Tyrol according to the 2011 census and the participation to the referendum that took place in the same year. Following this argument, we would expect informal sources of debt to represent a significant component of external financing for South Tyroleans from the Italian cultural group.

Finally, the literature on managerial style predicts that managers' individual traits and preferences (including those arising from culture) are likely to affect the decisions they make concerning not only their household, but also their firms. Thus, based on the above arguments, we derive our main hypotheses: (i) Firm managers from the Italian cultural group are more likely to resort to debt financing relative to firm managers of the Germanic cultural group, (ii) managers from the Italian cultural group are more likely to resort to informal forms of debt, such as trade credit, compared to managers from the Germanic cultural group.

[3] Our own calculations using data from the European Value Survey (2008-2010) show that Italians have significantly lower trust than Austrians (at a 1% significance level). Culturally, Austrians and Italians are the closest to the two groups present in South Tyrol. The generalized level of trust is measured with the percentage of respondents answering positively to the question "Most people can be trusted". See http://www.europeanvaluesstudy.eu/.

3.2 Step two: Classification of the manager's cultural origin

The second step consists of classifying firm managers into their cultural group. We start by selecting firms headquartered in the South Tyrol province with data available on Orbis-Bureau van Dijk. Given that Italian law requires such companies to file and deposit annual reports with the local Chamber of Commerce, this set of firms includes essentially all the limited liability firms (Societa' per Azioni and Societa' a Responsabilita' Limitata) headquartered in the province. Through the NACE industry classification code, we exclude utilities, financial, and real estate companies, due to their regulated status and peculiar capital and debt structure. For the remaining sample firms, we retrieve the latest available data on the board composition (as of March 2016), and identify the CEO.

To establish whether the CEO is of Germanic or Italian cultural origin we proceed as follows. We utilize search algorithms that identify the most common: Germanic surnames; Germanic male given names; Germanic female given names; Italian surnames; Italian male given names; Italian female given names.[4] Subsequently, a CEO is classified as having a Germanic cultural origin if all his/her given names and surname can be found in the Germanic listings, while he/she is classified as having an Italian cultural origin if given names and surname are in the Italian lists. We require that *both* the given name *and* the surname are Germanic (Italian) for a CEO to be associated with a Germanic (Italian) origin. We manually double-check the allocation of

[4] We retrieve Italian surnames from http://www.cognomix.it/origine-cognomi-italiani, which lists the most common Italian surnames explaining their origin. We obtain German and Austrian surnames, respectively, from https://de.wiktionary.org/wiki/Verzeichnis:Deutsch/Liste_der_h%C3%A4ufigsten_Nachnamen_Deutschlands and https://de.wiktionary.org/wiki/Verzeichnis:Deutsch/Liste_der_h%C3%A4ufigsten_Nachnamen_%C3%96sterreichs, which are based on telephone directories of the countries and were manually cleaned to eliminate foreign last names. Finally, first names come from http://www.vornamen-weltweit.de/maennlich-deutsch.php, http://www.vornamen-weltweit.de/weiblich-deutsch.php, and http://www.vornamen-weltweit.de/geographisch.php?land=4.

CEOs to the two categories to ensure that such requirement is satisfied. In comparison to alternative classification criteria based only on the first name or on the surname, our approach enables us to achieve a neater identification of the origin of managers and reduce potential misclassification bias due, for example, to bilingual families. Bilingual families may lead to misclassification to the extent that managers whose parents speak different languages cannot be easily associated with one of the two cultures. Given that bilingual families are most likely to manifest themselves through mixed names (e.g., a Germanic first name and an Italian surname), constraining both the name and the surname of the manager to be of the same linguistic origin should minimize such instances. Our classification criterion is not overly restrictive, as only 5.8% of the firm managers in the province have a discordant Germanic (Italian) first name and Italian (Germanic) surname.[5] Since we are interested in comparing the features of firms run by managers of Germanic and Italian origins, we discard managers with a different linguistic origin, which account for 2.1% of the firms in the province. Some examples of how we have classified managers are provided in Appendix A.

3.3 Step three: Impact of the manager's culture on firm financing

The third and final step of our research approach is to show that the cultural background of the manager has an impact on the firm's choices of financing channels. We do so by regressing a number of firm financing outcome variables on the manager's cultural origin indicator obtained above.

[5] For robustness, we repeat our analysis by classifying the linguistic origin of CEOs on the basis of (i) their first name only, and (ii) their surname only. The results, available from the authors upon request, are qualitatively unchanged.

Our regression analysis exploits the cross-sectional variation in managers' culture and firm financing structure. We obtain information about the financing structure from Orbis. This database provides only the latest available information on the composition and characteristics of the top management of a firm. For consistency, in our main analyses we extract the latest financial statements available (as of March 2016) for our sample firms. This ensures that the firm financial variables we look at refer to a time when the manager was in charge of the company.[6]

Table 1 reports basic summary statistics on the cross section of our sample firms. Our key variable is the indicator variable *CEO of Italian origin*, which takes a value of one if the manager is classified as of Italian origin and zero if he/she is classified as of Germanic origin. On average, 31.1% of the managers in the sample are of Italian origin. This is in line with the overall percentage of Italian-speaking population in South Tyrol, which was equal to 26.1% according to the 2011 Census (ASTAT, 2015). We map the distribution of firms with a CEO of Italian origin by city in Figure 2. We note by comparing Figure 2 to Figure 1 that the cities with the largest proportion of CEOs of Italian origin are mostly, but not always, the cities where the population is predominantly Italian speaking.

In terms of other firm characteristics, none of the firms in the sample is publicly traded and only 2.3% are large firms according to the definitions provided by the European Commission (i.e. turnover larger than 50 million euros or total assets larger than 43 million euros). The financing structure of our firms is therefore very simplified and consists essentially of equity, bank loans and trade credit. To analyze the financing structure of firms we use the following ratios: External debt financing over total assets—constructed as the sum of loans, long term debt and accounts

[6] As we shall see below, all of the firms in the sample are privately held and most of them are small or micro firms. As a result, the cultural origin of the management of the company is unlikely to change over a relatively small time horizon. For robustness, in Section 5.2 we also exploit the panel dimension of the Orbis data.

payable over total assets—which measures the total actual borrowings of the firms; Total debt over total assets, as a measure of recourse to formal financing (i.e. bank loans); Accounts payable over total assets as a measure of recourse to informal financing (i.e. trade credit). These will be the main dependent variables in our analysis, together with three indicator variables for the use of external debt, bank debt, or trade credit. To complement our analysis, we also include two variables to analyze the asset structure of the firms' balance sheet: Cash over total assets, and accounts receivable over total assets, as a measure of how much credit a firm provides to its clients.

In Table 2, we compare the balance sheet structure of firms led by managers of Italian and Germanic origins by means of a standard two-sample t-test for differences in means. Our findings suggest that firms run by managers of Italian culture are more likely to resort to external debt than firms run by managers of Germanic culture: With the exception of the ratio of total debt to assets, which is statistically indistinguishable between the two groups, the debt indicators and debt levels are significantly larger for the firms run by managers of Italian origin. These firms are also characterized by a larger recourse to more informal sources of funding, such as trade credit (and debit). The two sets of companies also differ along other dimensions. Compared to their Germanic-led counterparties, firms with a manager of Italian origin are smaller and younger, hold more cash, have a lower share of tangible assets, operate on smaller average margins, and are led by managers who are older and more likely to be female.

4. Main Results

4.1 Multivariate findings

In the remainder of the paper, we shift our analysis to a multivariate setting. Table 3 reports the estimates from OLS regressions where the dependent variables measure the firms' liability and asset structure. In all specifications, we add a set of standard control variables that previous literature has found to be significant determinants of firm capital structure. Firm-specific controls include size, asset tangibility, sales growth, investment, operating margin, and age. We also add some manager-specific variables to account for CEO characteristics, other than the linguistic origin, that may affect capital and debt structure choices, i.e. age, age squared, and an indicator variable that takes a value of one if the manager is male and zero if female. Details on how dependent and control variables are calculated are in Appendix B. All continuous variables in our analyses are winsorized at the 1% and 99% levels to minimize the impact of outliers. In addition, we use beginning-of-the-year values for our balance sheet control variables to mitigate endogeneity concerns. Although our sample is cross-sectional, we add fiscal year-end fixed effects to account for the fact that the latest year of available balance sheet data is not the same for all sample firms. We employ industry fixed effects, computed according to the 21 NACE classification groups, to capture industry-specific differences in the firm financing structure. Finally, we add city fixed effects, i.e. one dummy variable for each of the 116 municipalities in the province. These fixed effects enable us to control for any variation in institutional, geographical and economic characteristics across municipalities with majorities of German-

speaking or Italian-speaking population (and managers) that may potentially confound our results. Standard errors are corrected for heteroscedasticity.[7]

The results in Table 3 confirm that firms run by managers of Italian cultural origin are more likely to resort to external debt financing, and borrow significantly more, than firms run by individuals of Germanic cultural origin. Results in the first, third, and sixth columns show that, once controlling for standard determinants of firm financing, the former are 5.5 to 10.7 percent more likely to use external debt, bank debt, and trade credit, than the latter. Consistently, we also find that the former also hold more debt than the latter: External debt financing (total debt) over total assets is on average 3.3 (1.9) percentage points higher for Italian-led firms, explaining 10.5% (8.2%) of its total standard deviation. Managers of Italian origin also display a higher use of informal sources of financing: The ratio of trade credit is on average 1.5 percentage points higher for firms where the manager is of Italian origin, explaining 7.5% of its total standard deviation. In what follows, we advance an explanation for which channels are most likely to be driving our results.[8]

4.2 Explanatory channels

The lower recourse to external debt funding observed in firms run by Germanic managers is consistent with the preference for avoiding debt that can be associated with the morally charged

[7] Results remain qualitatively unchanged if we cluster the standard errors by city.

[8] We also repeat the estimations using the cultural origin of the Board of Directors, i.e. a dummy equal to one (zero) when the majority of the members of the board have an Italian (Germanic) origin, in lieu of the cultural origin of the CEO. The estimates, reported in Appendix C, are very similar to the ones in Table 3. In order to single out the cultural impact of the CEO from that of the board, one should look at instances where the cultural origin of the CEO differs from that of the board. This is however unfeasible in our sample of small and privately held firms, as in 99.7% (99.9%) of cases a firm with a board of Italian (Germanic) origin is led by a CEO from the same cultural group.

reference to debt (*Schuld*) in the German language. Consistently with this interpretation, in untabulated results we find that (i) the higher recourse to debt by Italian firms is mostly driven by the extensive margin, i.e., the decision to borrow from external sources, rather than by the amount of debt taken conditional on borrowing, and (ii) firms with Italian-speaking managers are significantly less likely to keep retained earnings. Additionally, our findings on the more intense use of trade credit from managers of the Italian cultural group can be explained with their lower level of trust/social capital and their preference for interacting within informal organizations. As discussed in Section 3, individuals of Italian cultural origin are associated with a lower level of generalized trust and a stronger preference for informal networks, which are both consistent with a more intense use of informal financing sources for managers from this group.

An alternative explanation of our results, that is also consistent with the lower levels of trust in institutions of individuals of Italian origin, is that CEOs from this cultural group rely more intensively on debt financing to reduce their cash transfers to the government. As mentioned before, interest on debt is tax deductible for all firms in the province. However, this fails to explain why firms with Italian-speaking managers would also resort more to trade credit, which does not include an explicit interest rate and hence cannot be used for tax deductibility purposes.

Similarly, our results cannot be convincingly explained by referring to standard classifications of cultural dimensions. Schwartz's and Hofstede's cultural measures have been widely used to explain cross-country differences in capital structure and trade credit. Specifically, Chui et al (2002) and Li et al. (2011) link capital structure to the Schwartz's indicators of embeddedness and mastery, while El Ghoul and Zheng (2016) link the use of trade credit to Hofstede's measures of collectivism, power distance, uncertainty avoidance and masculinity. While Schwartz's and Hofstede's scores for the population of South Tyrol are unavailable, the scores

for Austria and Italy, which are the closest countries to our Germanic and Italian cultural groups, are fairly similar and fall within the same quartile in the distribution of all indicators except power distance.[9] Hence, it is unlikely that these score differences *per se* are sufficient to explain our results.

Newly proposed cultural metrics based on linguistic differences in future-time reference are equally unlikely to fully explain our results. Chen (2013) finds that individuals who speak a language in which future actions are typically expressed in present tense (i.e. weak future-time reference languages, such as German) display a stronger future-oriented behavior (in terms of savings, having a retirement account, exercising, or not smoking) than individuals who speak a language with a strong future-time reference (such as Italian). Chen et al. (2017) extend the argument to firm policies and find higher cash holdings in weak future-time reference language firms. Within our setting, the future-time reference argument should translate into higher cash ratios in firms run by managers of Germanic origin compared to those run by managers of Italian origin. The estimates reported in the fifth column of Table 3 show instead that the difference in cash holdings across firms run by managers of different cultural background is economically unimportant and statistically insignificant. For this reason, we exclude cash holdings as a dependent variable in the rest of the analysis.

In order to interpret our results in terms of choice/preference of the top management for different forms of financing, we need to ensure that the estimated coefficients are not capturing a spurious correlation between the cultural origin of the manager and other unobserved factors. In the remainder of the paper, we discuss and rule out several competing explanations.

[9] Authors' calculations (available upon request) based on Schwartz's and Hofstede's country indicators retrieved from https://www.researchgate.net/profile/Shalom_Schwartz and https://geert-hofstede.com, respectively.

5. Robustness Checks

In this section, we adopt several approaches to address potential endogeneity concerns that may bias our analysis, in terms of both reverse causality and omitted variables. Reverse causality or self-selection occurs if managers of a given cultural origin choose to work for firms with given characteristics. In our setting, this would be the case if managers of Italian (Germanic) origin were attracted by companies with higher (lower) recourse to external debt financing. An omitted variable bias arises in the presence of additional factors that affect both the financing decisions of firms and the cultural origin of managers, such as a lower supply of credit for individuals of one cultural group. Given the lack of detailed firm-bank and client-supplier level data, we cannot perfectly disentangle the effect of culture from such unobserved factors. We nevertheless attempt to overcome this limitation by performing additional analyses that exploit unique institutional features of the province under study.

5.1 Local environment and banking sector

One alternative interpretation to our findings is that firms led by managers of Italian cultural origin find it easier to access external financing compared to firms led by German-speaking CEOs. As we will discuss, this seems unlikely in our setting. In fact, we show in Table 2 that companies run by German-speaking CEOs are larger, older, more profitable, and have more tangible assets. These firm characteristics make them more suitable for lending and, therefore, less likely to be rationed (see e.g., Kaplan and Zingales, 1997; Petersen and Rajan, 1997; Hadlock and Pierce, 2010 among many others). Also, the use of city fixed effects controls for local factors that may impact the access to bank financing, such as the local banking market

competition (Love and Peria, 2015) and geographical proximity to financial institutions (Degryse and Ongena, 2005; Agarwal and Hauswald, 2010).

City fixed effects also help control for potential differences in the lending standards of banks at the local level. For the purposes of corporate lending, the banking market in South Tyrol consists of 54 banks, 85% of which are local banks headquartered in the province (one *Cassa di Risparmio/Sparkasse*, one *Banca Popolare/Volksbank* and 44 *Banche di Credito Cooperativo/Raiffeisen*) and the remaining 15% are Italian banks headquartered elsewhere.[10] Small municipalities are mostly served by local banks while large cities are also served by national banks.

Nevertheless, a residual concern may apply to the interpretation of our findings if the segmentation in the banking market is highly correlated with the cultural origin of firm managers. Specifically, if lending standards differ across banks, firm managers of a certain cultural group may: (i) have to turn to banks with restrictive lending conditions, if these are the only ones locally present, or (ii) choose to turn to those banks, even in the presence of other banks with more favorable lending standards. Such a choice could be motivated by behavioral preferences: Fisman et al. (2017) find that the cultural origin of individual bank managers plays a significant role in bank lending in a multicultural environment. In our setting, this would translate into German-speaking firm managers borrowing predominantly from banks whose managers belong to their own cultural group. If those banks apply stricter lending standards than those that lend to Italian-speaking CEOs, it may be hard to disentangle to what extent our findings are driven by such differences as opposed to the financing preferences of managers.

[10] The market share of corporate lending for local banks in the South Tyrol province is around 50% (Bank of Italy, 2016). The correlation between the population size of a municipality and the proportion of banks that operate in the municipality but are headquartered outside the South Tyrol province is 60%.

To identify the cultural origin of bank managers in our sample, we gather the names and locations of all 347 bank branches in the South Tyrol province.[11] From the banks' websites and press releases, we retrieve the name of the bank managers in charge of corporate loans (bank branch manager, corporate loan officer, or corporate area manager) and we classify those managers as having an Italian or Germanic cultural origin based on their names, in line with the approach followed to classify our CEOs. We show the geographical distribution of bank managers according to their cultural origin in Figure 3.

In the absence of firm-bank level data, we proceed by investigating how our main results compare in: (i) environments that are characterized by a predominantly German-speaking population or where the bank managers are mostly of Germanic origin, and (ii) the more heterogeneous capital city of Bolzano, where population, firm managers and bank managers are more evenly distributed across the two cultural groups. A comparison of Figures 1, 2, and 3 suggests that, while the degree of spatial segmentation of the cultural groups is high, there exists some variation that enables us to investigate the behavior of firm managers of Italian origin in predominantly German-speaking environments. The estimates are presented in Table 4. The regressions in panel A include only those cities where less than 30% of the population is Italian-speaking, while the regressions in panel B include only those cities where less than 30% of the banks have an Italian-speaking manager. We choose a 30% cutoff point: (i) to grant sufficient sample size and representativeness of firms of Italian origin in the two subsamples; and (ii) for consistency with the analysis presented in panel D for the city of Bolzano, where about 70% of the population is Italian-speaking. The 30% threshold excludes 16% (panel A) and 20% (panel B) of the cities in our baseline sample. However, the municipalities that are removed are

[11] Source: http://www.tuttitalia.it/trentino-alto-adige/provincia-autonoma-di-bolzano/22-banche/

relatively large and are home to a large number of firms, hence the sample size is reduced by 53% in panel A and 57% in panel B. Although the average fraction of Italian-speaking bank managers in panel B is only 7.9%, in Panel C we attempt to stretch the banking segmentation further and perform more selective regressions on firms headquartered in municipalities with only German-speaking bank managers. Finally, panel D investigates the subsample of firms headquartered in the city of Bolzano. An additional advantage of this specification is that we can fully control for all location-related features by focusing on a single city, the province's largest. All specifications include industry fixed effects and the same set of control variables as in Table 3, and panels A to C also control for city fixed effects.

Results in panels A, B, and D are similar and consistent with the main findings in Table 3: The coefficients for the three indicator variables of the use of external debt, bank debt and trade credit are large and statistically significant. The continuous variables preserve sign and magnitude, but lose statistical significance compared to the overall sample in Table 3, most likely due to the small size of the subsamples. In contrast, the findings in panel C do not show significant differences in the financing patterns of firms of different cultural origin. However, relative to the sample in panel B, in this panel the sample size is further reduced by one third and the number of firms of Italian origin by 45%. While we cannot fully exclude the possibility that in this overwhelmingly homogeneous subsample the cultural channel is either weaker or works differently (for example, in the form of a strong integration to the local culture), we suspect that the lack of statistical significance is mostly due to the extremely low within-city variation in the cultural origin dummy in this sample.

Overall, our results from Table 4 confirm that firms led by CEOs of Italian cultural origin are more likely to resort to external borrowing than their German-speaking peers both in

environments that are largely German-speaking and in environments that are culturally diverse. In other words, the cultural origin of the CEO has a significant impact on the financing choices of the firms regardless of the prevailing cultural environment of the firm's location.

5.2 Financial and sovereign crisis

Another explanation for the results in Table 3 is that they may be driven by a differential impact of the financial and sovereign crisis on firms led by managers of different cultural origins. Indeed, we recall from Table 2 that firms led by Italian managers display characteristics that are typically observed in constrained firms. Our findings could then be consistent with a scenario in which the financially weaker firms run by a manager of Italian cultural origin suffer higher net worth losses during the financial crisis (for example due to fire sales or lower profitability), resulting in higher post-crisis leverage ratios for these firms.[12] In a similar vein, the greater use of trade credit could be consistent with Italian-led firms resorting to trade credit to partially compensate for the lack of institutional credit during the crisis. Levine et al. (2018) find that culture matters in increasing the resilience to systemic banking crises in firms with high liquidity needs through trade credit, performance and employment.

We address this issue by exploiting a unique feature of the firms in our sample, namely, that all of them are privately held, and the majority of them are small firms. Thus, the management of our sample firms is likely to be stable over a short time horizon. We take advantage of this feature to overcome the limitation of the Orbis data on firm managers (which refer to the last available balance sheet date), and exploit the panel dimension of the financial statement data, by

[12] Higher losses could also result if managers of the Italian cultural group did not react as well as their Germanic peers to the challenges imposed by the crisis. Indeed, existing studies have linked the manager's cultural origin with firm performance under competitive pressure (Nguyen et al., 2018).

assuming that the cultural origin of the management of our companies is stable throughout the sample years. Balance sheet data on the sample firms are available on Orbis for the most recent ten years. We re-estimate our baseline OLS specifications on the full 10-year panel dataset of firms headquartered in the province, and evaluate whether the results observed in the cross-sectional dataset stem from the crisis period. For this purpose, we add the interaction between our indicator for CEO of Italian origin and a dummy variable *Crisis*, which takes a value of one if the year of the financial statement coincides with the period of credit tightening in the South Tyrol province. The statistics on conditions of credit supply provided by the Bank of Italy (2007-2016) indicate that there was a credit contraction and a tightening in credit conditions in the province during years 2008-2013, and that such contraction relaxed from year 2014 onwards.[13] Therefore, we define two dummy variables accordingly: *Crisis*, which equals one for 2008-2013 and zero otherwise, and *Post Crisis*, which equals one for the years 2014-2015 and zero otherwise. We interact each of these two dummies with our cultural origin dummy.

We present the results in Table 5, panels A and B. In panel A, we include industry, city and year fixed effects; the latter subsume the effect of the un-interacted *Crisis* and *Post Crisis* dummies. In panel B, we further control for time-invariant unobserved heterogeneity at the firm level, by including firm fixed effects, which absorb the city fixed effects. The firm fixed effects in panel B also subsume the effect of the un-interacted cultural origin dummy, but the interaction term provides us with a direct test for a differential behavior of firms led by a manager of Italian cultural origin relative to firms led by a manager of Germanic cultural origin during the crisis. In

[13] This period contrasts with the crisis period in Italy, which started in 2008 and continued until at least the end of our sample period. However, the South Tyrol province developed differently to the rest of Italy. In fact, it is the only Italian province that had a higher GDP level in 2015 than in 2007. Our results are qualitatively equal if we define a single *Crisis* dummy taking the value one from 2008 to 2015, coinciding with the crisis in Italy.

both panels, we account for the fact that observations of the same firm over time are not independent, and cluster the standard errors at the firm level.

The estimated coefficients for the dummy of Italian cultural origin in panel A of Table 5 largely confirm that firms led by managers of Italian origin are characterized by a larger recourse to external debt funding in general and informal sources of funding in particular, than firms run by managers of Germanic origin. Indeed, the coefficients of the un-interacted cultural origin dummy are positive and statistically significant, and have similar magnitudes as the coefficients in Table 3. These results suggest that the financing patterns of firms managed by a manager of Italian cultural origin existed before the crisis, confirming our interpretation of the results as driven by preferences rather than by a potentially worse financial situation of Italian-led firms. Furthermore, the coefficients of the interaction term with the *Crisis* dummy in panels A and B show that Italian-led firms actually obtained more bank credit during the time of a reduced supply for credit, further mitigating concerns that their weaker financial situation during the crisis could have led to our previous findings. In fact, the coefficients of the interaction term with the crisis for the external debt financing ratio and the debt to assets ratio (second and fourth columns in both panels) are positive and significant, suggesting that firms led by a manager of Italian cultural origin increased their access to external borrowing and to formal sources of credit during the crisis. Consistently with this interpretation, the coefficient of this interaction term for the ratio of accounts payable (sixth column) is small and statistically insignificant, suggesting that on average, firms led by managers of Italian origin did not use more trade credit during the crisis. Finally, the coefficient of the cultural dummy on the regression for accounts receivable in Panel B shows that Italian-led firm actually increased the provision of trade credit to their clients during the crisis (last column). In line with the redistribution theory of trade credit, this result

suggests that firms that have access to formal sources of credit are able to provide liquidity to their clients in times when bank credit is scarce (Garcia-Appendini and Montoriol-Garriga, 2013), and it provides evidence that Italian firms were investing in the relationships with their clients. Once again, this is inconsistent with the idea that results are driven by potentially weaker Italian-led firms.[14]

5.3 Trade credit supply

A related concern is that the results in Table 3 are driven by differences in the supply of trade credit for firms of different cultural origin. There are several reasons why the supply of trade credit could be correlated with the cultural origin of the firm's manager. First, suppliers could display different degree of trust towards firms of different cultural origin (Guiso et al., 2009) and hence they might require cash payments or offer trade credit for firms of distinct cultural groups. Second, previous literature has found stark differences in the provision of trade credit across different countries (Rajan and Zingales, 1995; ECB, 2011; El Ghoul and Zheng, 2016). To the extent that a portion of these differences can be explained by culture (El Ghoul and Zheng, 2016), our findings could be consistent with a scenario in which firms of Italian (Germanic) cultural origin buy mostly from firms of the same cultural group, which may differ in their

[14] To confirm that our findings are driven by an increase in debt, rather than a reduction in assets of firms with Italian-speaking managers, in Appendix D we use panel regressions with firm fixed effects to compare the evolution of assets, debt, and employment in firms of different cultural origin during the crisis. The positive and statistically significant coefficients of the interaction of culture and the crisis in columns 2 and 3, and the insignificant ones in columns 1 and 4 confirm that the larger debt ratios observed for firms of Italian origin are driven by an increase in the levels of debt, and not a reduction in their net worth or a lower investment in labour. Further, results in Appendix E suggest that those firms invested larger amounts in fixed capital, and performed similarly to firms of Germanic origin during the crisis. Overall, the evidence confirms our interpretation that the larger recourse to debt of Italian-led firms is driven by preferences rather than by a differential impact of the financial and sovereign crisis on firms led by managers of different cultural origins.

willingness to provide trade credit.. Third and relatedly, if firms with German-speaking managers in the province are more likely than their Italian-speaking peers to import their goods from German-speaking countries, then differences in the use of trade credit could reflect differences in the payment periods offered across countries.

We address this issue by controlling for the potential supply of trade credit in a two-step estimation strategy similar to the one in Petersen and Rajan (1997). In the first step, we predict the amount of credit offered by the firms' suppliers, accounting for the cultural origin of the firms in addition to other standard predictors of trade credit supply. We then use the predicted quantity of trade credit supplied to a firm as an additional regressor in the trade credit equations. Additionally, in Section 5.4 we deal with the possibility that the results may reflect different credit payment terms offered for imported goods.

We measure the supply of trade credit as the product of the ratio of the firm's purchases over total assets (where the purchases are calculated as the sum of the cost of raw materials and services), by the fraction of purchases made on credit. Unlike Petersen and Rajan (1997), we do not have survey information providing firm-level measures for the fraction of purchases made on credit. However, trade credit policies are largely determined by the nature of the goods sold and have limited within-industry variation (Ng et al., 1999; Giannetti et al., 2011). Therefore, we calculate this fraction at the industry level, using the (weighted) average of the ratios of accounts receivable to sales in the industries from which our sample firms purchase their goods and services. To identify these industries, we use the input-output matrix of the South Tyrol province, provided by Astat/Istat.[15]

[15] The input-output matrix was obtained from http://dati.istat.it/Index.aspx?DataSetCode=DCCN_SQCT. All additional firm-specific variables used in this section are obtained from Aida-Bureau van Dijk. The procedure used

As in Petersen and Rajan (1997), we estimate the supply of trade credit as a function of the customer's credit quality (proxied by the firm's size, age, operating margin, and tangible assets), the availability of bank credit (ratio of total debt to total assets), the firm's relationships with suppliers (sales growth), liquidation costs (as measured by the fraction of total inventories that corresponds to finished goods), and the CEO's cultural origin dummy. We then augment the regression in Table 3 using the predicted supply of trade credit from the first-stage regression. Results are contained in Table 6. The first two columns show coefficient estimates for the trade credit user dummy, and the second two columns show estimates for the accounts payable ratio as dependent variables.

The specifications reported in the first and third columns correspond to the reduced-form specifications in Table 3, augmented with the predicted amount of trade credit supply obtained from the first-stage regressions. In the second and fourth columns, we additionally include a control for the fraction of current assets over total assets, which is likely to affect the need for financing through trade credit. Throughout the specifications, results show a positive correlation between the amount of trade credit supplied to each firm and the use or quantity of trade credit demanded. More importantly, our main results are robust to this estimation procedure that accounts for the supply of trade credit.

5.4 Further endogeneity concerns

In this section we address additional endogeneity issues by replicating the results of Table 3 over subsamples of firms where self-selection is unlikely to occur and/or omitted variable concerns are minimal. First, we restrict our analysis to the subsample of family firms where the manager is

to calculate the fraction of purchases on account using the input-output matrix is available from the authors upon request.

a family member. Such companies are typically founded and run by the same family over their entire life. This minimizes the possibility that managers of a given cultural origin choose to work for firms with certain characteristics. We retrieve information on the ownership structure of the sample firms from Orbis, and we classify a company as a family firm if one or several related individuals hold the majority of the shares. We then restrict our sample to those family firms whose manager is a family member, i.e. he/she is one of the majority shareholders or carries the surname of the controlling family.[16] Around 60% of the original sample firms satisfy the restrictions. Around 29% of these firms are led by a family of Italian cultural origin.

We re-estimate our main specification over the subsample of family firms, and report the estimates in panel A of Table 7. For the benefit of space, we only report the coefficients for the cultural origin dummy; however, the estimations in this table include all the controls and fixed effects of Table 3. The positive and significant coefficients of the *CEO of Italian origin* dummy with respect to the three financing dummy variables *External debt user*, *Bank user* and *Trade credit user* confirm that the financing pattern discussed above is a general feature of these firms and is not caused by endogeneity. In terms of magnitude, the coefficients are similar to the ones in Table 3.

Second, we look into a potential endogenous matching of cultural origin of the manager and firm size. To the extent that firms where the manager is of Germanic origin are, overall, larger and better established than their Italian counterparts (see Table 2), our results could be capturing different financing policies driven by firm size. While we control for firm size in all our

[16] Our method may, in fact, underestimate the number of family firms in the sample as, following Italian law, women in South Tyrol retain their maiden name after marriage. This, however, is unlikely to introduce any bias in the analysis, as it is expected to affect family firms where the CEO is of either Italian or Germanic origin in the same way.

specifications, the effect may be non-linear. To overcome this issue, we perform the estimations over the more homogeneous subsample of micro firms, defined as firms with total assets up to 2 million euros. Results over the subsample of micro firms are presented in panel B of Table 7. They consistently show that firms where the manager is of Italian origin are more likely to borrow and also display higher levels of external borrowing in general and trade credit in particular. Once again, the coefficients are of similar magnitude as the ones found in Table 3.

Third, we address the possibility that our results are driven by an omitted variable, namely, the terms of credit granted by the firms' trading partners. The trade credit literature suggests that the terms of credit are largely invariant within an industry, and related to the nature of the traded good (Ng et al., 1999; Giannetti et al., 2011). Given that our estimations contain industry fixed effects, the coefficients obtained so far are unlikely to be biased due to differences across industries in the terms of trade credit. However, as mentioned in Section 5.3, terms of trade differ within the euro area (ECB, 2011) and, hence, may be different for imported purchases compared to domestic purchases. Given the location of the South Tyrol area on the border with Austria and Switzerland, one potential concern is that firms with a manager of Germanic origin may be more likely to buy goods from these German-speaking countries, and that the observed differences are due to the different credit terms in these countries. Therefore, we need to ensure that our results cannot be mechanically explained by different trading patterns between the two cultures.

Unfortunately, Orbis does not disclose the amount of firms' imports. Thus, to control for this potential bias, we re-run our estimation over a subsample of firms that are less likely to be importers, according to the input-output matrix for the South Tyrol province. The matrix contains data on the fraction of purchases that represent imports. We derive our subsample by eliminating the upper quartile of firms by ratio of imports to total purchases (corresponding to

13.1% or more imports). The estimates are shown in Table 7, panel C, and confirm our main findings.

Fourth, we address the possibility that managers of a given cultural group are concentrated in certain industry sectors. Figure 4 displays the distribution of the managers' cultural origin within each industry. We see that this distribution closely mirrors that of the overall sample firms (i.e. 31.1% of Italian-speaking CEOs) in the various industries. For robustness, we re-run our estimates excluding the two sectors with the lowest proportion of Italian-speaking CEOs (*agriculture, forestry and fishing* and *manufacturing*) and the two sectors with the highest proportion of Italian-speaking CEOs (*education* and *human health and social work activities*). We report the results in Panel D of Table 7, and they are once again consistent with our main findings. To further ensure that the cultural heterogeneity of the industries is not itself driving the results, we replace in Table 8 the industry and city fixed effects with interacted city * industry fixed effects (Panel A) and with city * industry * firm size group fixed effects (Panel B). We follow the European Commission to define four firm size groups: micro, (small), [medium] and {large} firms are those with total assets of up to 2, (10), [43] {above 43} million euros. Coefficients in this case compare firms of different cultural origin in the same city and industry (and size group), hence having similar financing needs and access to the same set of opportunities. The results are qualitatively very similar to the ones in Table 3.[17]

[17] We also perform a matching exercise where we compare the financing choices of Italian-led firms with their closest counterfactual led by a manager of Germanic cultural origin in terms of city, firm size group (micro, small, medium, large) and industry. We run a regression analysis using the subsets of closest matches and we report the results in Appendix F. The estimates are qualitatively very similar to the estimates in Table 3, suggesting that our results are not driven by a selection of firms led by a manager of Italian cultural origin into particular industries, size groups or cities.

5.5 Neighboring provinces

Finally, in this section we address one concern that may be specific to our geographical laboratory. Specifically, the negative shocks that the population of South Tyrol has experienced since the annexation (c.f. Section 2) may have translated into a higher risk aversion of the German-speaking population that, in turn, may manifest itself as a present-day aversion towards high leverage.

We believe that this is unlikely to be driving our findings for two reasons. First, survey measures of risk aversion are higher in Italy than in Austria and Germany (Rieger et al., 2015). Puntscher et al. (2014) focus on the South Tyrol province and find that the Italian-speaking population is more mistrusting than the German-speaking population. If one is ready to assume that risk aversion and mistrust are linked, these findings provide evidence against the German-speaking group being more risk averse. Second, the assets-to-equity ratio in small and medium sized firms is higher in Italy than in Austria and Germany (ECCBSO, 2014). Ignoring all the caveats involved in cross-country comparisons, this suggests that, consistently with our cultural and linguistic explanation, CEOs of Italian origin borrow more than CEOs of Germanic origin in general and not only within the province of South Tyrol.

Nevertheless, we further investigate this point by comparing the capital structure of firms headquartered in the neighboring provinces of Tyrol in Austria and Trentino in Italy. These areas were also part of the Habsburg Empire but, unlike South Tyrol, did not experience any negative shocks from its dissolution, and are monolingual. We gather financial data on companies headquartered in the Austrian Tyrol and Trentino provinces from Orbis for the latest available fiscal year prior to 2016. Since Austrian firms with less than 300 employees are not required to file detailed financial information (see Orbis Bureau van Dijk User Manual), we can only

compute the shareholder equity ratio, measured as equity over total assets, an inverse measure of leverage. Table 9 displays summary statistics for the shareholder equity ratio in the provinces of Austrian Tyrol, South Tyrol and Trentino. In the first column of Table 10 we regress this ratio on a dummy variable that indicates if the firm comes from the Trentino province (one) or the Austrian Tyrol province (zero) as our key explanatory variable. For this sample, we do not have information on the CEOs so we only include firm-specific controls, industry fixed effects, and controls for the end of the fiscal year. From the positive and strongly significant coefficient of the *Headquarters in Trentino*, we conclude that in the bordering areas of Trentino and Austrian Tyrol, Italian firms tend to hold relatively less equity than Austrian firms. Since these areas have not been exposed to the negative shocks that occurred in South Tyrol, these findings again support our interpretation that the leverage decision is not driven by province-specific risk aversion.[18]

To conclude this section, we make use of the data from these neighboring provinces to emphasize the benefits of conducting the analysis in a multicultural environment within the same economic and institutional setting. In the second column of Table 10 we compare shareholder equity ratios in firms of Germanic origin in South Tyrol, Italian origin in South Tyrol and Italian origin in Trentino, using Germanic firms in Austrian Tyrol as our (omitted) base group. We observe that firms run by CEOs of Germanic origin have similar capitalization ratios both in South Tyrol and in Austrian Tyrol. Firms run by CEOs of Italian origin in Trentino instead have lower equity ratios than their cultural peers in South Tyrol. More interestingly, the difference in

[18] A residual concern specific to South Tyrol may be linked to potentially different levels of wealth of firm managers of the two cultural groups. Given that most of our firms are small and owner-managed, the link between the firm and the CEO's household raises the question if the firm's financing decision should be studied in connection with the CEO's wealth. Unfortunately, it is impossible to formally test this issue due to unavailability of data on the personal wealth of individuals in South Tyrol.

shareholder equity ratios between firms in Trentino and firms in Austrian Tyrol (which differ along both cultural and economic/institutional dimensions) is significantly different from the corresponding difference between Italian-speaking and German-speaking firms in South Tyrol (which differ only along the cultural dimension). This highlights the importance of focusing on an environment with a fixed regulatory, economic and institutional environment to study the cultural preferences for financing structure.

6. Overall Conclusions

This paper examines the relation between the cultural origin of firm managers and corporate financing behavior. Motivated by the evidence from previous literature on the relationship between social capital and financial development, on individuals' preferences for conducting economic activities within either formal institutions or informal networks, and on managerial style, we conjecture that the composition of firm liabilities can be shaped by culturally embedded preferences of their managers. Consistent with our conjecture, we find large and significant differences in the financing structure of firms run by individuals of different cultural origin. Our method, which analyzes firms within a small geographical province in one country, ensures that these results are not driven by institutional, regulatory, religious or economic differences associated with the different cultures. Lacking detailed bank-firm level data, we perform a series of robustness checks to further rule out that our results are driven by omitted variables and other endogeneity concerns. Throughout the different analyses, our results are consistent with the existence of culturally embedded preferences for different types of financing structures.

For the benefit of internal validity and identification, we have set up our analysis in one particular province in Italy that hosts two different cultural groups. While the setting of our study

is highly specific, the results have, in general, a much wider external validity. In particular, the South Tyrol province has a level of GDP comparable to that of many advanced economies, and aligned with the average GDP of the European Union. Moreover, its residents are active in a wide range of sectors, from agriculture to manufacturing and services, and enjoy a high degree of industrialization. Thus, we believe that our results are informative on the effect of culture on the financing practices of firms in wider setups, particularly for advanced economies.

Our main results highlight culture as one of the drivers of the variation in the recourse to financing in a multi-cultural setup. In terms of policy implications, our results suggest that one-size-fits-all regulations aimed at incentivizing the access to formal sources of finance could have heterogeneous effects depending on the preferences of different cultural groups affected by the regulation. Similarly, our study suggests that financial education should be structured differently according to the preferences of the different target cultural groups.

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Table 1. Summary statistics

This table reports summary statistics for the cross section of sample firms headquartered in the South Tyrol province with a CEO of Italian or Germanic origin as of the latest available year prior to 2016. The origin of the CEO is determined as illustrated in Appendix A. Dependent and control variables are computed as explained in Appendix B.

Variables	N	Mean	Std	p25	p50	p75
CEO cultural origin:						
CEO of Italian origin	3,526	0.311	0.463	0	0	1
Dependent variables:						
External debt user	3,526	0.741	0.438	0	1	1
External debt financing / Total assets	3,526	0.315	0.315	0	0.239	0.566
Bank user	3,526	0.516	0.500	0	1	1
Total debt / Total assets	3,526	0.161	0.232	0	0.001	0.281
Cash / Total assets	3,416	0.109	0.164	0.004	0.031	0.146
Trade credit user	3,526	0.734	0.442	0	1	1
Accounts payable / Total assets	3,526	0.153	0.200	0	0.076	0.231
Accounts receivable / Total assets	3,526	0.203	0.246	0	0.097	0.348
Firm control variables:						
Firm size	3,526	13.75	1.818	12.56	13.75	14.95
Asset tangibility	3,526	0.263	0.289	0.032	0.134	0.439
Sales growth	3,526	0.045	0.585	-0.104	0.016	0.146
Investment	3,526	0.039	0.080	0.004	0.016	0.047
Operating margin	3,526	0.097	0.479	0.026	0.076	0.178
Firm age	3,526	16.05	14.39	5	12	23
Predicted trade credit supply	3,526	0.308	0.135	0.226	0.334	0.404
Current assets	3,526	0.662	0.306	0.433	0.766	0.932
CEO control variables:						
CEO age	3,526	52.71	11.54	45	52	60
CEO is male	3,526	0.880	0.325	1	1	1

Table 2. T-tests for differences in mean values

This table reports mean values, standard deviations and t-tests of differences in means (with associated p-values) of dependent and control variables for the cross section of sample firms headquartered in the South Tyrol province with a CEO of Italian or Germanic origin as of the latest available year prior to 2016. Firm controls refer to the last available balance sheet date in Orbis (as of March 2016). The origin of the CEO is determined as illustrated in Appendix A. Dependent and control variables are computed as explained in Appendix B.

	CEO of Italian origin		CEO of Germanic origin			
Variables	Mean	Std	Mean	Std	t-test	p-value
Dependent variables:						
External debt user	0.770	0.421	0.728	0.445	2.703	0.007
External debt financing / Total assets	0.334	0.312	0.307	0.316	2.371	0.018
Bank user	0.542	0.498	0.505	0.500	2.005	0.045
Total debt / Total assets	0.157	0.218	0.162	0.238	-0.656	0.512
Cash / Total assets	0.121	0.177	0.104	0.158	2.797	0.005
Trade credit user	0.764	0.425	0.720	0.449	2.803	0.005
Accounts payable / Total assets	0.176	0.218	0.143	0.190	4.340	0.000
Accounts receivable / Total assets	0.225	0.259	0.193	0.239	3.523	0.000
Firm control variables:						
Firm size	13.31	1.936	13.95	1.727	-9.278	0.000
Asset tangibility	0.227	0.274	0.279	0.294	-5.112	0.000
Sales growth	0.028	0.672	0.052	0.542	-1.052	0.293
Investment	0.037	0.081	0.040	0.080	-0.938	0.348
Operating margin	0.064	0.545	0.111	0.445	-2.511	0.012
Firm age	14.47	12.71	16.77	15.04	-4.688	0.000
Supply of trade credit (predicted)	0.288	0.133	0.316	0.135	-5.765	0.000
Current assets	0.692	0.295	0.648	0.310	4.032	0.000
CEO control variables:						
CEO age	53.83	12.09	52.21	11.26	3.758	0.000
CEO is male	0.842	0.365	0.898	0.303	-4.401	0.000

Table 3. Cultural origin OLS regressions

This table reports OLS estimates for the cross section of sample firms headquartered in the South Tyrol province with a CEO of Italian or Germanic origin as of the latest available year prior to 2016. The origin of the CEO is determined as illustrated in Appendix A. Dependent and control variables are computed as explained in Appendix B. Standard errors are corrected for heteroskedasticity. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	External debt user	External debt financing / Total assets	Bank user	Total debt / Total assets	Cash / Total assets	Trade credit user	Accounts payable / Total assets	Accounts receivable / Total assets
CEO of Italian origin	0.055***	0.033**	0.107***	0.019**	-0.003	0.055***	0.015*	0.013
	(0.017)	(0.013)	(0.020)	(0.009)	(0.007)	(0.018)	(0.009)	(0.010)
Firm size	0.048***	0.022***	0.080***	0.020***	-0.023***	0.047***	0.003	0.005**
	(0.005)	(0.003)	(0.005)	(0.002)	(0.002)	(0.005)	(0.002)	(0.003)
Asset tangibility	-0.028	0.040*	0.171***	0.188***	-0.123***	-0.040	-0.150***	-0.259***
	(0.030)	(0.022)	(0.034)	(0.018)	(0.009)	(0.030)	(0.012)	(0.012)
Sales growth	0.019	0.014	0.026*	-0.005	0.004	0.025*	0.019***	0.015**
	(0.013)	(0.010)	(0.014)	(0.007)	(0.005)	(0.013)	(0.007)	(0.007)
Investment	0.137	0.203***	0.302***	0.182***	-0.106***	0.127	0.019	-0.199***
	(0.087)	(0.074)	(0.102)	(0.054)	(0.027)	(0.090)	(0.046)	(0.038)
Operating margin	-0.027*	-0.048***	-0.027	-0.021**	0.025***	-0.025	-0.024***	0.009
	(0.015)	(0.014)	(0.019)	(0.010)	(0.005)	(0.016)	(0.008)	(0.007)
Firm age	-0.002***	-0.003***	-0.002***	-0.002***	0.001***	-0.002***	-0.001***	-0.000
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
CEO age	0.006	0.004	0.009**	0.002	0.001	0.006	0.002	0.007***
	(0.005)	(0.003)	(0.005)	(0.002)	(0.001)	(0.005)	(0.002)	(0.002)
CEO age squared	-0.000	-0.000	-0.000*	-0.000	-0.000	-0.000	-0.000	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CEO is male	0.019	0.008	0.011	0.017	0.009	0.020	-0.009	-0.006
	(0.024)	(0.016)	(0.026)	(0.011)	(0.008)	(0.024)	(0.011)	(0.013)
Constant	0.269	0.375*	-0.443**	-0.032	0.421***	0.260	0.396***	0.105
	(0.170)	(0.211)	(0.205)	(0.141)	(0.069)	(0.171)	(0.115)	(0.095)
Observations	3,526	3,526	3,526	3,526	3,416	3,526	3,526	3,526
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls for fiscal year end	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.063	0.057	0.115	0.115	0.138	0.060	0.092	0.139

Table 4. Local environment analysis

This table reports estimates for the cross section of firms headquartered in the South Tyrol province with a CEO of Italian or Germanic origin as of the latest available year prior to 2016. The sample in panel A (B) [C] {D} is restricted to firms that are headquartered in cities where the population of Italian speakers is less than 30% (where the proportion of banks with a manager of Italian cultural origin is less than 30%) [with no Italian-speaking bank managers] {Bolzano}. CEO of Italian origin is a dummy variable constructed as illustrated in Appendix A. All panels include industry fixed effects and control for firm size, asset tangibility, sales growth, investment, operating margin, age, CEO characteristics (age, age squared, gender), and fiscal year end. Panels A, B, C include city fixed effects. Dependent and control variables are defined in Appendix B. Standard errors are corrected for heteroscedasticity. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	External debt user	External debt financing / Total assets	Bank user	Total debt / Total assets	Trade credit user	Accounts payable / Total assets	Accounts receivable / Total assets
Panel A: Cities with less than 30% Italian speaking population							
CEO of Italian origin	0.073***	0.028	0.088**	0.012	0.067*	0.017	0.004
	(0.035)	(0.027)	(0.038)	(0.018)	(0.035)	(0.017)	(0.019)
Observations	1,673	1,673	1,673	1,673	1,673	1,673	1,673
Proportion It. CEO obs.	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Adj. R-squared	0.084	0.055	0.128	0.111	0.076	0.100	0.149
Panel B: Cities with less than 30% bank managers of Italian origin							
CEO of Italian origin	0.075**	0.044	0.090**	0.012	0.067*	0.033*	0.022
	(0.036)	(0.028)	(0.040)	(0.019)	(0.037)	(0.018)	(0.021)
Observations	1,499	1,499	1,499	1,499	1,499	1,499	1,499
Proportion It. CEO obs.	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Adj. R-squared	0.140	0.069	0.142	0.101	0.091	0.117	0.158
Panel C: Cities with no bank managers of Italian origin							
CEO of Italian origin	0.018	0.029	-0.014	-0.011	0.019	0.040	0.024
	(0.047)	(0.038)	(0.049)	(0.025)	(0.047)	(0.026)	(0.026)
Observations	1,014	1,014	1,014	1,014	1,014	1,014	1,014
Proportion It. CEO obs.	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Adj. R-squared	0.134	0.079	0.167	0.153	0.121	0.126	0.167
Panel D: City of Bolzano							
CEO of Italian origin	0.051**	0.035*	0.124***	0.016	0.056**	0.018	0.028*
	(0.024)	(0.018)	(0.028)	(0.013)	(0.024)	(0.013)	(0.015)
Observations	1,292	1,292	1,292	1,292	1,292	1,292	1,292
Proportion It. CEO obs.	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Adj. R-squared	0.034	0.061	0.098	0.083	0.036	0.092	0.116

Table 5. External financing during the financial and sovereign crisis

This table reports estimates for the panel of firms headquartered in the South Tyrol province with a CEO of Italian or Germanic origin over the years 2006-2015. CEO of Italian origin is a dummy variable constructed as in Appendix A. Crisis (Post crisis) equals one for the years 2008-2013 (2014-2015) and zero otherwise. The time-varying firm-level controls are firm size, asset tangibility, sales growth, investment, operating margin, age. CEO characteristics are age, age squared, gender. Dependent and control variables are defined in Appendix B. Standard errors are clustered at the firm level. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	External debt user	External debt financing / Total assets	Bank user	Total debt / Total assets	Trade credit user	Accounts payable / Total assets	Accounts receivable / Total assets
			Panel A: Estimations with industry fixed effects				
CEO of Italian origin	0.035**	0.031**	0.074***	0.012	0.039**	0.017*	0.021*
	(0.014)	(0.015)	(0.022)	(0.012)	(0.016)	(0.010)	(0.012)
CEO of Italian origin * Crisis	0.041***	0.026**	0.049***	0.026***	0.037***	0.002	0.006
	(0.013)	(0.012)	(0.018)	(0.010)	(0.014)	(0.008)	(0.009)
CEO of Italian origin * Post crisis	0.014	0.005	0.020	0.008	0.010	-0.001	-0.013
	(0.020)	(0.016)	(0.024)	(0.012)	(0.021)	(0.011)	(0.012)
Observations	22,091	22,091	22,091	22,091	22,091	22,091	22,091
Firm-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CEO characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	No	No	No	No	No	No	No
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.085	0.107	0.128	0.145	0.085	0.162	0.214
			Panel B: Estimations with firm fixed effects				
CEO of Italian origin * Crisis	0.045***	0.020*	0.043**	0.024***	0.042***	-0.003	0.018**
	(0.013)	(0.011)	(0.017)	(0.009)	(0.014)	(0.007)	(0.007)
CEO of Italian origin * Post crisis	0.032*	0.007	0.019	0.013	0.030	-0.004	0.010
	(0.019)	(0.014)	(0.023)	(0.011)	(0.020)	(0.009)	(0.010)
Observations	22,091	22,091	22,091	22,091	22,091	22,091	22,091
Number of firms	3,526	3,526	3,526	3,526	3,526	3,526	3,526
Firm-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CEO characteristics	No	No	No	No	No	No	No
Industry FE	No	No	No	No	No	No	No
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City FE	No	No	No	No	No	No	No
Adj. R-squared	0.045	0.063	0.032	0.044	0.042	0.046	0.042

Table 6. Controlling for the supply of trade credit

This table reports the second stage of a two-step estimation for trade credit usage for the cross section of sample firms headquartered in the South Tyrol province with a CEO of Italian or Germanic origin as of the latest available year prior to 2016. CEO of Italian origin is a dummy variable constructed as illustrated in Appendix A. Predicted trade credit supply are the fitted values of a first-stage regression model relating trade credit supply to the firm's credit quality, the availability of bank credit, relationships with suppliers, liquidation costs and CEO's cultural origin (see the text for details). Dependent and control variables are defined in Appendix B. Standard errors are corrected for heteroscedasticity. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	Trade credit user		Accounts payable / Total assets	
CEO of Italian origin	0.088***	0.088***	0.046***	0.044***
	(0.019)	(0.019)	(0.009)	(0.009)
Firm size	0.053***	0.054***	0.009***	0.011***
	(0.005)	(0.005)	(0.002)	(0.002)
Asset tangibility	0.206***	0.217***	0.075***	0.186***
	(0.058)	(0.066)	(0.029)	(0.033)
Sales growth	-0.017	-0.017	-0.020**	-0.016**
	(0.016)	(0.016)	(0.008)	(0.008)
Investment	0.137	0.147	0.027	0.133***
	(0.091)	(0.095)	(0.046)	(0.046)
Operating margin	0.001	0.001	-0.000	-0.004
	(0.017)	(0.017)	(0.008)	(0.008)
Firm age	-0.002***	-0.002***	-0.001***	-0.001***
	(0.001)	(0.001)	(0.000)	(0.000)
CEO age	0.006	0.006	0.002	0.002
	(0.005)	(0.005)	(0.002)	(0.002)
CEO age squared	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
CEO is male	0.022	0.022	-0.008	-0.006
	(0.024)	(0.024)	(0.011)	(0.011)
Predicted trade credit supply	0.679***	0.674***	0.622***	0.577***
	(0.134)	(0.135)	(0.074)	(0.074)
Current assets		0.015		0.149***
		(0.046)		(0.022)
Constant	-0.108	-0.124	0.059	-0.095
	(0.188)	(0.193)	(0.118)	(0.120)
Observations	3,526	3,526	3,526	3,526
Industry FE	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes
Controls for fiscal year end	Yes	Yes	Yes	Yes
Adj. R-squared	0.064	0.064	0.109	0.122

Table 7. Subsample analysis

This table reports estimates for the cross section of firms headquartered in the South Tyrol province with a CEO of Italian or Germanic origin as of the latest available year prior to 2016. The sample in panel A (B) [C] {D} is restricted to those family firms whose CEO is a family member (is restricted to firms with total assets of up to 2m euros) [excludes the upper quartile of importing firms] {excludes agriculture, forestry and fishing, manufacturing, education, human health and social work activities}. CEO of Italian origin is a dummy variable constructed as illustrated in Appendix A. All panels include industry fixed effects, city fixed effects and controls for firm size, asset tangibility, sales growth, investment, operating margin, age, CEO characteristics (age, age squared, gender), and fiscal year end. Dependent and control variables are defined in Appendix B. Standard errors are corrected for heteroscedasticity. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	External debt user	External debt financing / Total assets	Bank user	Total debt / Total assets	Trade credit user	Accounts payable / Total assets	Accounts receivable / Total assets
			Panel A: Family firms				
CEO of Italian origin	0.043*	0.016	0.076***	0.005	0.042*	0.011	0.011
	(0.024)	(0.018)	(0.027)	(0.013)	(0.025)	(0.011)	(0.013)
Observations	2,104	2,104	2,104	2,104	2,104	2,104	2,104
Adj. R-squared	0.036	0.060	0.097	0.101	0.032	0.104	0.125
			Panel B: Micro firms				
CEO of Italian origin	0.064***	0.031*	0.123***	0.013	0.062***	0.019*	0.021
	(0.023)	(0.016)	(0.025)	(0.011)	(0.023)	(0.011)	(0.013)
Observations	2,314	2,314	2,314	2,314	2,314	2,314	2,314
Adj. R-squared	0.051	0.059	0.070	0.094	0.052	0.073	0.109
			Panel C: Excluding importing firms				
CEO of Italian origin	0.050**	0.036**	0.109***	0.018*	0.047**	0.018*	-0.003
	(0.020)	(0.015)	(0.023)	(0.011)	(0.021)	(0.010)	(0.012)
Observations	2,678	2,678	2,678	2,678	2,678	2,678	2,678
Adj. R-squared	0.067	0.054	0.119	0.118	0.062	0.086	0.132
			Panel D: Excluding culturally homogeneous industries				
CEO of Italian origin	0.073***	0.035**	0.118***	0.017*	0.071***	0.019**	0.018
	(0.019)	(0.014)	(0.022)	(0.010)	(0.019)	(0.010)	(0.012)
Observations	2,843	2,843	2,843	2,843	2,843	2,843	2,843
Adj. R-squared	0.056	0.055	0.113	0.122	0.050	0.084	0.137

Table 8. Further controls for the local environment

Panel A (B) reports estimates for the cross section of sample firms headquartered in the South Tyrol province with a CEO of Italian or Germanic origin as of the latest available year prior to 2016 after including city-industry fixed (city-industry-firm size) effects. Firm size—micro, small, medium, or large—follows the European Commission definitions. CEO of Italian origin is a dummy variable constructed as illustrated in Appendix A. All regressions include controls for firm size, asset tangibility, sales growth, investment, operating margin, age, CEO characteristics (age, age squared, gender), and fiscal year end. Dependent and control variables are defined in Appendix B. Standard errors are robust to heteroscedasticity. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	External debt user	External debt financing / Total assets	Bank user	Total debt / Total assets	Trade credit user	Accounts payable / Total assets	Accounts receivable / Total assets
			Panel A: City-industry fixed effects				
CEO of Italian origin	0.059***	0.038***	0.112***	0.020**	0.059***	0.018*	0.015
	(0.019)	(0.014)	(0.022)	(0.010)	(0.020)	(0.009)	(0.012)
Observations	3,526	3,526	3,526	3,526	3,526	3,526	3,526
City-industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls for fiscal year end	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.059	0.065	0.111	0.148	0.057	0.065	0.097
			Panel B: City-industry-firm size fixed effects				
CEO of Italian origin	0.053**	0.039**	0.122***	0.021**	0.054**	0.018*	0.017
	(0.022)	(0.016)	(0.025)	(0.011)	(0.022)	(0.011)	(0.013)
Observations	3,526	3,526	3,526	3,526	3,526	3,526	3,526
City-industry-firm size FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls for fiscal year end	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.050	0.068	0.106	0.170	0.046	0.019	0.068

Table 9. Capital structure in neighboring provinces: Summary statistics

This table reports summary statistics for the ratio of shareholders equity over total assets in the cross section of sample firms headquartered in South Tyrol, Austrian Tyrol and Trentino for the last available year prior to 2016.

	N	Mean	Std	p25	p50	p75
Overall	7,946	0.312	0.255	0.096	0.248	0.481
South Tyrol	3,528	0.299	0.264	0.070	0.227	0.474
Austrian Tyrol	373	0.408	0.235	0.221	0.390	0.577
Trentino	4,045	0.316	0.247	0.108	0.254	0.477

Table 10. Capital structure in neighboring provinces: OLS estimates

The first (second) column reports estimates for the cross section of sample firms headquartered in Austrian Tyrol and Trentino (South Tyrol, Austrian Tyrol and Trentino) for the last available year prior to 2016 with respect to the ratio of shareholders equity over total assets. Headquarters in Trentino is a dummy variable indicating if the firm comes from Trentino. Headquarters in Austrian Tyrol is an omitted dummy variable indicating if the firm comes from Austrian Tyrol. CEO of Germanic origin in South Tyrol and CEO of Italian origin in South Tyrol are dummy variables for the cultural origin of the CEOs in South Tyrol. These two variables take their values from the CEO of Italian origin variable. All other control variables and the dependent variables are computed as explained in Appendix B. Standard errors are corrected for heteroskedasticity. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	Equity / Total assets	
Headquarters in Trentino (1)	-0.073***	-0.065***
	(0.015)	(0.014)
CEO of Germanic origin in South Tyrol (2)		0.019
		(0.017)
CEO of Italian origin in South Tyrol (3)		-0.016
		(0.018)
Headquarters in Austrian Tyrol (4)	Omitted	Omitted
Firm size	-0.012***	-0.011***
	(0.003)	(0.002)
Asset tangibility	0.064***	0.043***
	(0.016)	(0.012)
Sales growth	-0.042***	-0.034***
	(0.008)	(0.006)
Investment	-0.058	-0.029
	(0.055)	(0.043)
Operating margin	0.191***	0.193***
	(0.025)	(0.017)
Firm age	0.004***	0.004***
	(0.000)	(0.000)
Constant	0.320***	0.354***
	(0.030)	(0.080)
Observations	4,418	7,946
Industry FE	Yes	Yes
Controls for fiscal year end	Yes	Yes
Adj. R-squared	0.096	0.109
F-test: 1 = 3		8.74***
F-test: 3 = 2		14.51***
F-test: (1 – 4) = (3 – 2)		4.51**

Figure 1. Cultural origin of cities in South Tyrol

This figure shows the distribution (quartiles) of Italian-speaking population by city as reported by the 2011 Census (ASTAT, 2015).

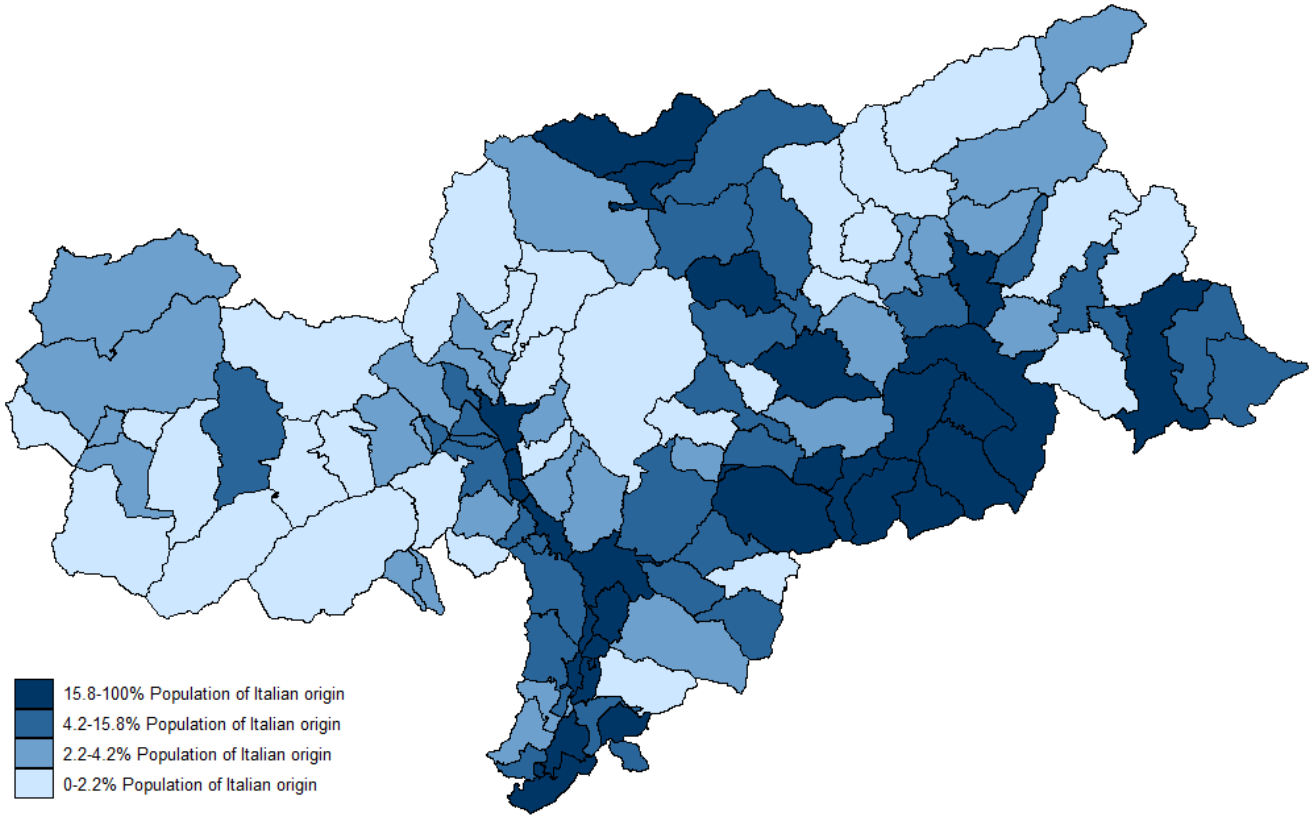


Figure 2. Cultural origin of CEOs in South Tyrol

This figure shows the distribution (quartiles) of firms in our sample where the CEO is of Italian origin by city.

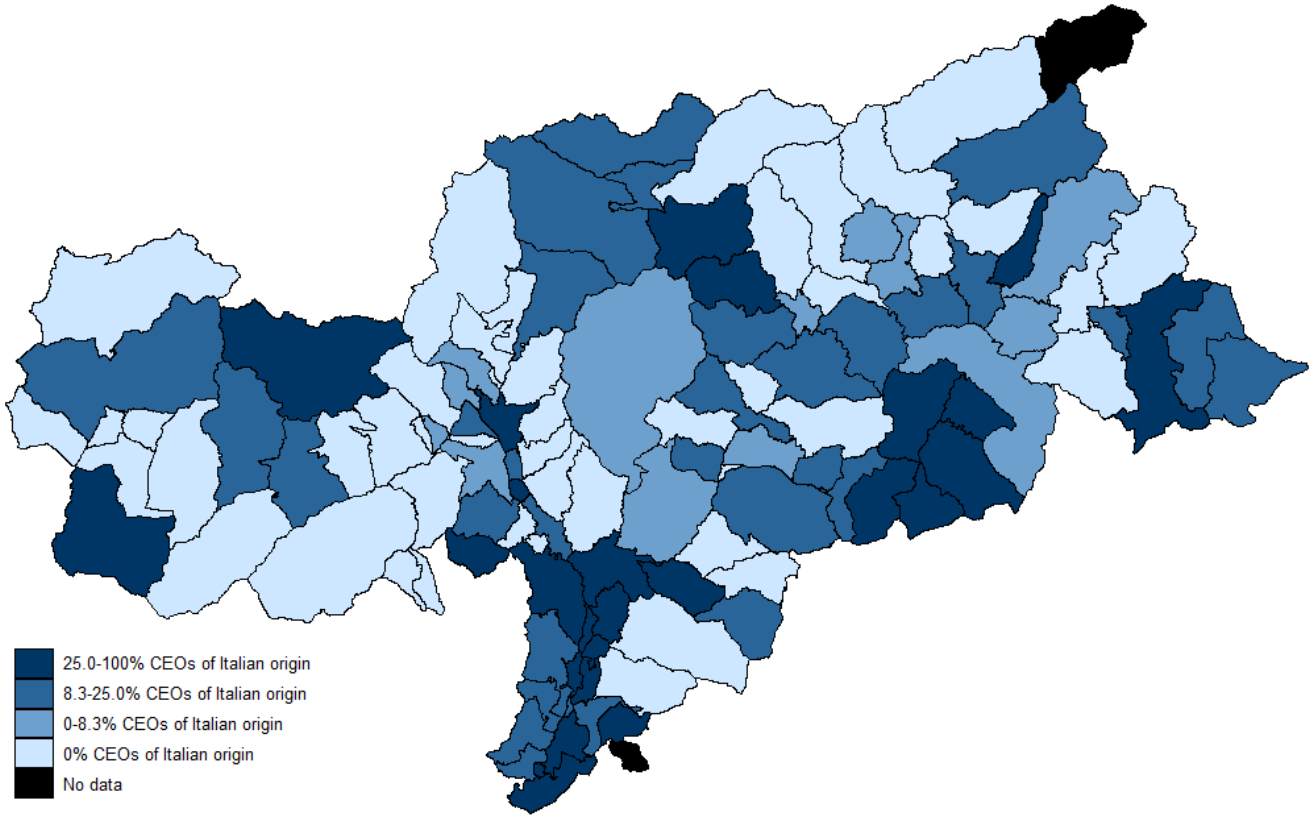


Figure 3. Cultural origin of bank managers in South Tyrol

This figure shows the proportion of banks where the manager is of Italian origin by city.

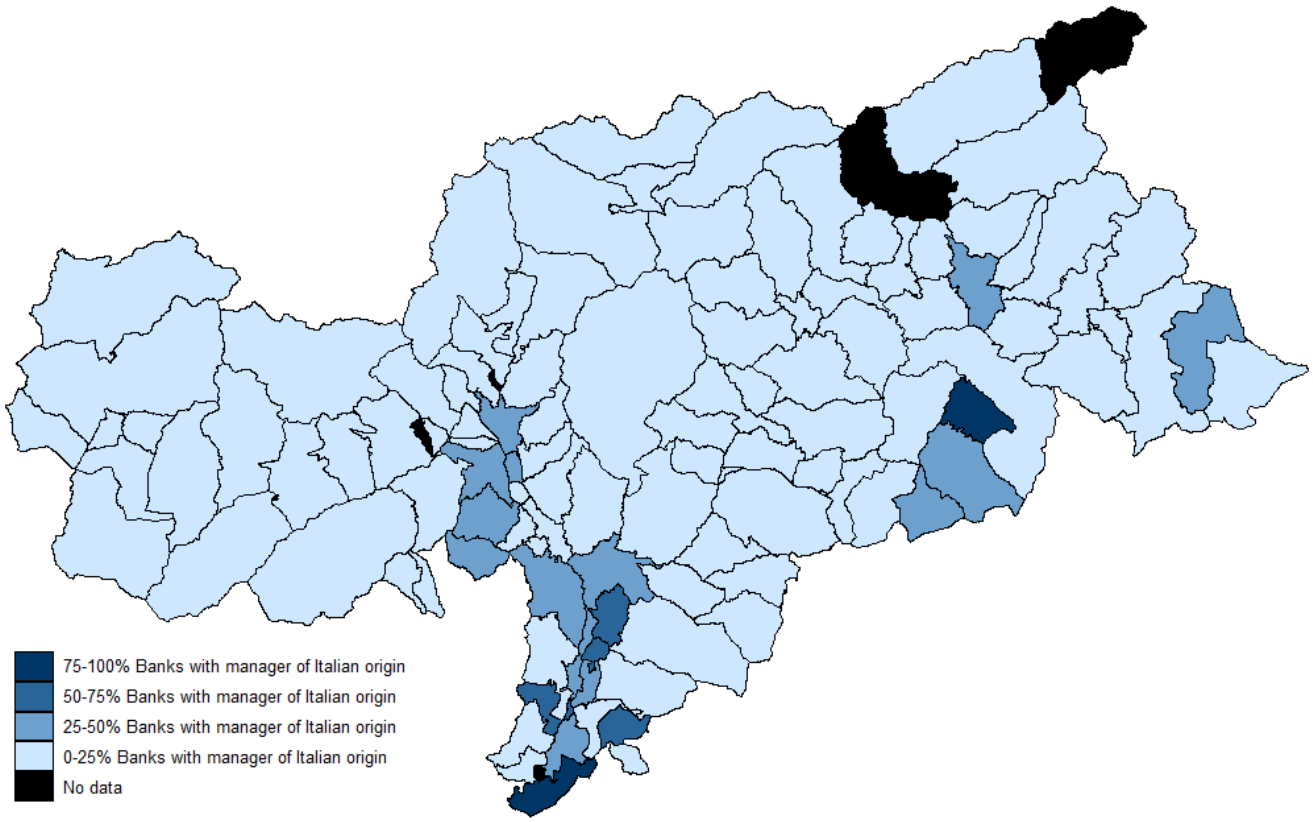
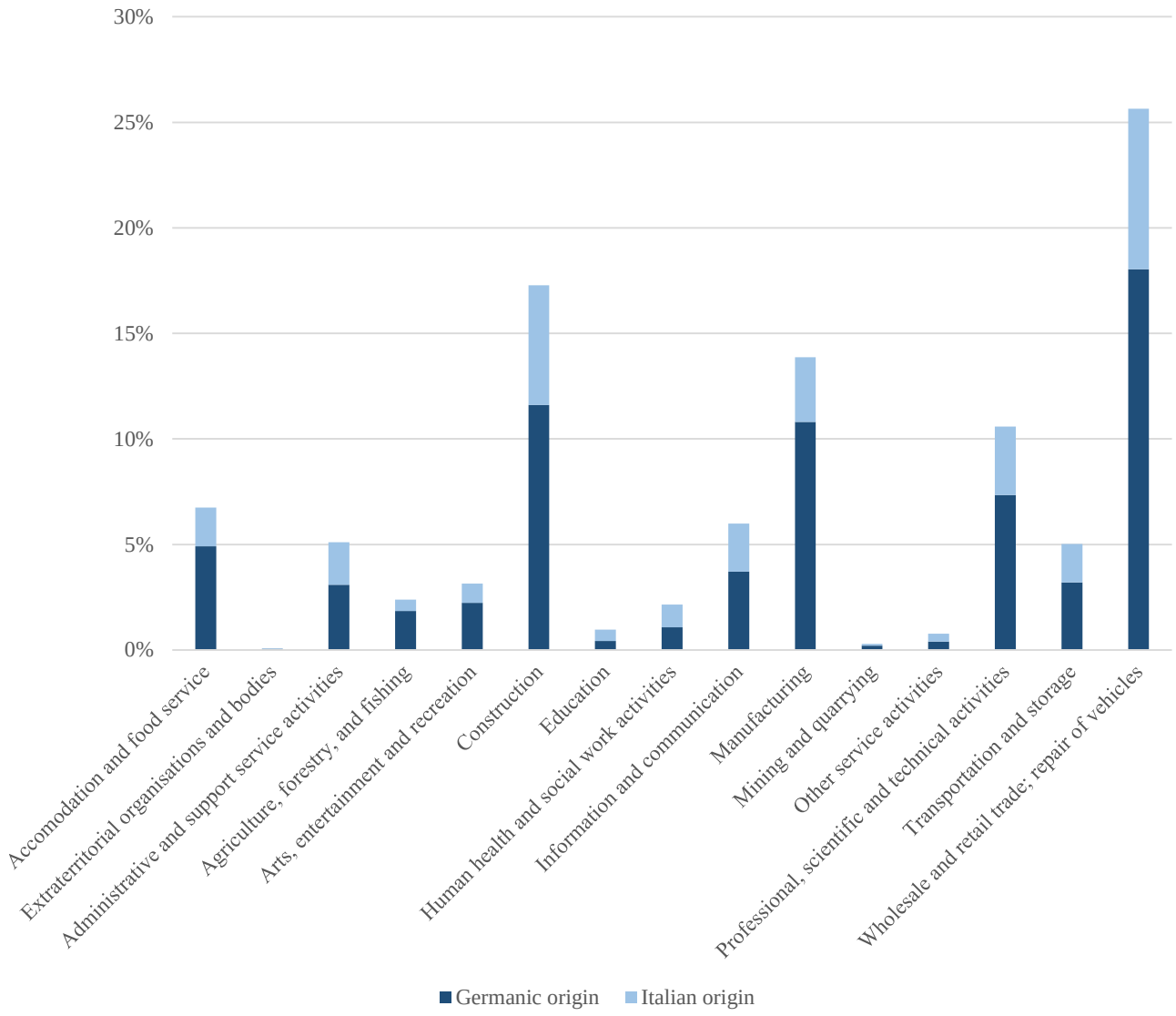


Figure 4. Cultural origin within industries

This figure shows the distribution of the managers' cultural origin within each industry.



Appendix A. Manager classification

We classify a CEO as of Italian origin if all his/her given names and surname are Italian. We classify a CEO as of Germanic origin if all his/her given names and surname are Germanic. If the given name is common to both Italian and Germanic languages, we classify the CEO origin based on the surname. Foreign CEOs and CEOs with discordant given names and surname are excluded. The following are some examples of CEO classification.

Name and surname	Criteria	Classification
Claudio La Spisa	Italian given name and surname	Italian
Georg Koessler	Germanic given name and surname	Germanic
Marco Fuchs	Italian or Germanic given name; Germanic surname	Germanic
Marco Iori	Italian or Germanic given name; Italian surname	Italian
Paolo Stocker	Italian given name; Germanic surname	Excluded
Guenther Longo	Germanic given name; Italian surname	Excluded
Youjun Luan	Foreign given name and surname	Excluded

Appendix B. Variable definitions

Variable	Calculation	Source
CEO of Italian origin	Dummy=1(=0) if manager is of Italian (Germanic) origin	Lists of Italian and German/Austrian most common names and surnames. Telephone directories
External debt user	Dummy=1 if (Loans + long term debt + creditors) > 0	Orbis BvD
External debt financing / Total assets	(Loans + long term debt + creditors) / Total assets	Orbis BvD
Ln(External debt financing)	Ln(Loans + long term debt + creditors)	Orbis BvD
Bank user	Dummy=1 if (Loans + long term debt) > 0	Orbis BvD
Ln(Employment)	Ln(Number of employees)	Orbis BvD
Total debt / Total assets	(Loans + long term debt) / Total assets	Orbis BvD
Ln(Total debt)	Ln(Loans + long term debt)	Orbis BvD
Trade credit user	Dummy=1 if Creditors > 0	Orbis BvD
Accounts payable / Total assets	Creditors / Total assets	Orbis BvD
Accounts receivable / Total assets	Debtors / Total assets	Orbis BvD
Cash / Total assets	Cash and cash equivalent / Total assets	Orbis BvD
Equity / Total assets	Shareholders funds / Total assets	Orbis BvD
Firm size	Ln(total assets)	Orbis BvD
Asset tangibility	Tangible fixed assets / Total assets	Orbis BvD
Sales growth	$Ln(sales) - ln(sales)_{-1}$	Orbis BvD
Investment	(Tangible fixed assets – tangible fixed $assets_{-1}$ + depreciation) / Total assets	Orbis BvD
Operating margin	Ebitda / Sales	Orbis BvD
Predicted trade credit supply	((Cost of raw materials + cost of services) / Total assets) * (Supplying industries' average accounts receivable / Total sales)	Orbis Aida BvD, ASTAT, ISTAT
Current assets	(Stocks + debtors + other current assets) / Total assets	Orbis BvD
Firm age	Firm age in years	Orbis BvD
CEO age	CEO age in years	Orbis BvD
CEO is male	Dummy=1 if CEO is male	Orbis BvD
Headquarters in Trentino	Dummy=1 if the headquarters are in Trentino	Orbis BvD
Headquarters in Austrian Tyrol	Omitted dummy=1 if the headquarters are in Austrian Tyrol	Orbis BvD
Proportion It. CEO obs.	CEO of Italian origin / observations	Authors' calculations

Appendix C. Cultural origin of the Board of Directors

This table reports estimates for the cross section of firms headquartered in the South Tyrol province with a board of directors of Italian or Germanic origin as of the latest available year prior to 2016. BoD of Italian origin is a dummy variable equal to one (zero) if the majority of the members of the Board of Directors is of Italian (Germanic) origin. Dependent and control variables are computed as explained in Appendix B. Standard errors are corrected for heteroskedasticity. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	External debt user	External debt financing / Total assets	Bank user	Total debt / Total assets	Cash / Total assets	Trade credit user	Accounts payable / Total assets	Accounts receivable / Total assets
BoD of Italian origin	0.063***	0.039***	0.116***	0.024**	-0.004	0.063***	0.016*	0.016
	(0.018)	(0.014)	(0.021)	(0.009)	(0.007)	(0.019)	(0.009)	(0.011)
Firm size	0.049***	0.022***	0.082***	0.021***	-0.023***	0.049***	0.002	0.005*
	(0.005)	(0.004)	(0.005)	(0.002)	(0.002)	(0.005)	(0.002)	(0.003)
Asset tangibility	-0.018	0.044*	0.169***	0.186***	-0.126***	-0.028	-0.144***	-0.255***
	(0.031)	(0.023)	(0.035)	(0.018)	(0.009)	(0.031)	(0.012)	(0.013)
Sales growth	0.020	0.014	0.028*	-0.006	0.003	0.027**	0.020***	0.016**
	(0.013)	(0.010)	(0.015)	(0.007)	(0.005)	(0.014)	(0.007)	(0.007)
Investment	0.170*	0.230***	0.362***	0.203***	-0.101***	0.178*	0.026	-0.174***
	(0.091)	(0.076)	(0.106)	(0.055)	(0.029)	(0.093)	(0.048)	(0.040)
Operating margin	-0.035**	-0.055***	-0.037*	-0.024**	0.025***	-0.033**	-0.028***	0.005
	(0.016)	(0.014)	(0.019)	(0.011)	(0.005)	(0.017)	(0.008)	(0.007)
Firm age	-0.002***	-0.003***	-0.002***	-0.001***	0.001***	-0.002***	-0.001***	-0.000
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
CEO age	0.008*	0.004	0.012**	0.002	0.001	0.008	0.002	0.007***
	(0.005)	(0.003)	(0.005)	(0.002)	(0.001)	(0.005)	(0.002)	(0.002)
CEO age squared	-0.000	-0.000	-0.000**	-0.000	-0.000	-0.000	-0.000	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CEO is male	0.021	0.002	-0.001	0.016	0.012	0.023	-0.014	-0.011
	(0.025)	(0.017)	(0.026)	(0.012)	(0.008)	(0.025)	(0.011)	(0.014)
Constant	0.194	0.378*	-0.482**	-0.048	0.427***	0.183	0.415***	0.096
	(0.177)	(0.217)	(0.210)	(0.145)	(0.071)	(0.178)	(0.119)	(0.097)
Observations	3,333	3,333	3,333	3,333	3,224	3,333	3,333	3,333
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls for fiscal year end	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.063	0.057	0.117	0.115	0.138	0.061	0.091	0.135

Appendix D. Firm size, debt, and investment in labour during the financial and sovereign crisis

This table reports estimates for the panel of firms headquartered in the South Tyrol province with a CEO of Italian or Germanic origin over the years 2006-2015. CEO of Italian origin is a dummy variable constructed as in Appendix A in the manuscript. Crisis (Post crisis) equals one for the years 2008-2013 (2014-2015) and zero otherwise. Dependent variables are defined in Appendix B. Standard errors are clustered at the firm level. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	Firm size	Ln(External debt financing)	Ln(Total debt)	Ln(Employment)
CEO of Italian origin * Crisis	-0.024	0.540***	0.486**	-0.008
	(0.023)	(0.167)	(0.215)	(0.036)
CEO of Italian origin * Post crisis	-0.014	0.345	0.176	-0.028
	(0.032)	(0.240)	(0.290)	(0.045)
Constant	13.830***	11.328***	8.433***	2.000***
	(0.011)	(0.086)	(0.109)	(0.015)
Observations	22,091	22,079	22,075	15,907
Number of firms	3,526	3,526	3,526	2,985
Firm-level controls	No	No	No	No
CEO characteristics	No	No	No	No
Industry FE	No	No	No	No
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
City FE	No	No	No	No
Adj. R-squared	0.067	0.046	0.028	0.039

Appendix E. Investment and operating margin during the financial and sovereign crisis

This table reports estimates for the panel of firms headquartered in the South Tyrol province with a CEO of Italian or Germanic origin over the years 2006-2015. CEO of Italian origin is a dummy variable constructed as in Appendix A. Crisis (Post crisis) equals one for the years 2008-2013 (2014-2015) and zero otherwise. Firm-level controls are firm size and age. CEO characteristics are age, age squared, gender. Dependent and control variables are defined in Appendix B. Standard errors are clustered at the firm level. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	Investment	Operating margin
Panel A: Estimations with industry fixed effects		
CEO of Italian origin	-0.009**	0.017
	(0.004)	(0.011)
CEO of Italian origin * Crisis	0.007*	-0.002
	(0.004)	(0.010)
CEO of Italian origin * Post crisis	0.007	-0.017
	(0.005)	(0.015)
Observations	22,091	22,091
Firm-level controls	Yes	Yes
CEO characteristics	Yes	Yes
Industry FE	Yes	Yes
Firm FE	No	No
Year FE	Yes	Yes
City FE	Yes	Yes
Adj. R-squared	0.039	0.046
Panel B: Estimations with firm fixed effects		
CEO of Italian origin * Crisis	0.004	-0.007
	(0.004)	(0.009)
CEO of Italian origin * Post crisis	0.005	-0.018
	(0.005)	(0.014)
Observations	22,091	22,091
Number of firms	3,526	3,526
Firm-level controls	Yes	Yes
CEO characteristics	No	No
Industry FE	No	No
Firm FE	Yes	Yes
Year FE	Yes	Yes
City FE	No	No
Adj. R-squared	0.064	0.003

Appendix F. Matching by size, industry, and city

This table reports estimates for the cross section of sample firms headquartered in the South Tyrol province with a CEO of Italian or Germanic origin as of the latest available year prior to 2016. Each firms led by a CEO of Italian origin is matched with a firm led by a CEO of Germanic origin of the same size, industry and city. Firm size—micro, small, medium, or large—follows the European Commission definitions. CEO of Italian origin is a dummy variable constructed as illustrated in Appendix A. All regressions include controls for firm size, asset tangibility, sales growth, investment, operating margin, age, CEO characteristics (age, age squared, gender), and fiscal year end. Dependent and control variables are defined in Appendix B. Standard errors are robust to heteroscedasticity. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	External debt user	External debt financing / Total assets	Bank user	Total debt / Total assets	Trade credit user	Accounts payable / Total assets	Accounts receivable / Total assets
CEO of Italian origin	0.060***	0.040***	0.123***	0.023**	0.059***	0.017*	0.018
	(0.019)	(0.014)	(0.021)	(0.009)	(0.019)	(0.009)	(0.011)
Observations	2,375	2,375	2,375	2,375	2,375	2,375	2,375
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls for fiscal year end	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.036	0.061	0.104	0.117	0.035	0.081	0.117